

CLAIMS

1. A cooperative control apparatus comprising:

5 a switching device which switches a generation mode of a generator between a low-generation mode and a high-generation mode using a prescribed electrical load amount as a threshold value when the generator is driven by an engine and charges a battery and the battery supplies electrical power to a plurality of electrical loads;

a total electric load amount calculating device which calculates a total electric load amount of the plurality of electrical loads;

10 a working state checking device which checks a working state of ones of the plurality of electrical loads;

a projecting device which generates a projected value of the total electric load amount of the plurality of electrical loads after a prescribed time elapses according to the total electric load amount and the working states of the plurality of electrical loads;

15 a target value setting device which sets target values of electric load amounts for ones of the plurality of electrical loads; and

an electric load amount reducing device which reduces the electric load amount of the plurality of electrical loads, wherein

20 when the projected value of the total electric load amount is larger than the threshold value and a difference between the projected value of the total electric load amount and the threshold value is lower than a prescribed value, a target value of the electric load amount of at least one of the plurality of electrical loads is set and the electric load amount thereof is reduced to target value so that the total electric load amount is made lower than the threshold value.

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2. A cooperative control apparatus according to claim 1, further comprising:

a first electronic control unit which is provided with the generation mode switching device; and

a second electronic control unit which is different from the first electronic control unit and which is provided with the total electric load amount calculating device, the working state checking device, the projecting device, the target value setting device, and the electric load amount reducing device.

3. A cooperative control apparatus according to claim 1 or 2, wherein

the electric load amount reduced is an electrical load amount of a load the electrical load amount of which is projected by the projecting device.

4. A cooperative control apparatus according to claim 1 or 2, wherein

the electric load amount reduced is an electrical load amount of a load the electrical load amount of which is not projected by the projecting device.

5. A cooperative control apparatus comprising:

a generation mode switching device which switches a generation mode of a generator between a low-generation mode and a high-generation mode using a prescribed electrical load amount as a threshold value when the generator is driven by an engine and charges a battery and the battery supplies electrical power to a plurality of electrical loads;

a total electric load amount calculating device which calculates a total electric load amount of the plurality of electrical loads;

a working state checking device which checking a working state of ones of the

plurality of electrical loads;

a projecting device which generates a projected value of the total electric load amount of the plurality of electrical loads after a prescribed time elapses according to the total electric load amount and a working state of a specific electrical load among the

5 plurality of electrical loads; and

an electric load amount reducing device which reduces the electric load amount of the plurality of electrical loads, wherein

when the projected value of the total electric load amount is higher than the threshold value, a working time of the specific electrical load is determined, and in a case
10 of the working time of the specific electrical load being shorter than a prescribed value, the generation mode of the generator is set to the low-generation mode while the specific electrical load works, and in a case of the working time being longer than the prescribed value, the electric load amount of at least one electrical load among the plurality of the electrical loads is reduced.

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6. A cooperative control apparatus according to claim 5, wherein

a first electronic control unit is provided with the generation mode switching device, and

a second electronic control unit which is separate from the first electronic
20 control unit is provided with the total electric load amount calculating device, the working state checking device, the projecting device, and the electric load amount reducing device.